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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/740,013	12/18/2003	Edward G. Sergoyan	7784-000675	2322
27572	7590	03/02/2005	EXAMINER	
HARNESS, DICKEY & PIERCE, P.L.C.			BENSON, WALTER	
P.O. BOX 828			ART UNIT	PAPER NUMBER
BLOOMFIELD HILLS, MI 48303			2858	

DATE MAILED: 03/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/740,013	Applicant(s) SERGOYAN ET AL.	
	Examiner Walter Benson	Art Unit 2858	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on IDS filed, 18 December 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/18/03</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-29 are presented for examination.

Drawings

2. The drawings are objected to because user input device item 50, page 6, line 25, is not shown in any of the figures presented. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-5, 7, 12-16, and 20, 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nix (US Patent No. 6,529,014 B1 and Nix hereinafter) in view of Cotler et al. (US Patent No. 5,382,911 and Cotler hereinafter).

5. As to claims 1, 2, 12, and 20, Nix discloses a system for measuring a thickness of a non-conductive coating on a semi-conductive substrate substantially as claimed, the system comprising:

a first conducting plate adapted to be placed in contact with a non-conductive coating on a semi-conductive substrate at a first location [claims 1, 12, 20] (15, Fig. 2d; col. 2, lines 61-66);

a second conducting plate adapted to be placed in contact with the non-conductive coating at a second location [claims 1, 12, 20] (15', Fig. 2d; col. 2, lines 61-66).

Nix did not expressly disclose:

a capacitance meter electrically connected to the first and second conducting plates, the capacitance meter adapted to measure a capacitance value of the non-conductive coating in combination with the semi-conductive substrate between the first and second conducting plates [claims 1, 12, 20];

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where the system further comprises a computer based subsystem electrically connected to the capacitance meter, the computer based subsystem adapted to use the measured capacitance value of the coating in combination with the substrate to determine a measured capacitance value of the coating between the first and second conducting plates [claims 2, 13, 20];

a computer based subsystem electrically connected to the capacitance meter, the computer based subsystem adapted to use the measured capacitance value of the non-conductive coating in combination with the semi-conductive mobile platform component to determine a measured thickness of the non-conductive coating [claim 20];

where the computer based subsystem is further adapted to utilize at least one lookup table to determine the measured capacitance value of the coating [claims 3, 5, 14, 16, 22, 24];

where the computer based subsystem is further adapted to determine a measured thickness of the coating based on the measured capacitance value of the coating [claims 4, 15, 23];

Nonetheless, these features are well known in the art and would have been an obvious modification of the system disclosed by Nix, as evidenced by Cotler.

Cotler discloses monitoring the interelectrode gap in a chamber having:

a capacitance meter electrically connected to the first and second conducting plates, the capacitance meter adapted to measure a capacitance value of the non-conductive coating in combination with the semi-conductive substrate between the first and second conducting plates [claims 1, 12, 20] (col. 2, lines 66-68 and col. 3, lines 1-5) provided by any suitable capacitance meter;

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where the system further comprises a computer based subsystem electrically connected to the capacitance meter, the computer based subsystem adapted to use the measured capacitance value of the coating in combination with the substrate to determine a measured capacitance value of the coating between the first and second conducting plates [claims 2, 13, 20] for providing capacitance value therebetween;

a computer based subsystem electrically connected to the capacitance meter, the computer based subsystem adapted to use the measured capacitance value of the non-conductive coating in combination with the semi-conductive mobile platform component to determine a measured thickness of the non-conductive coating [claim 20] (col. 3, lines 40-44) from the measured value of the capacitance generated by the meter;

where the computer based subsystem is further adapted to utilize at least one lookup table to determine the measured capacitance value of the coating [claims 3, 5, 14, 16, 22, 24] (col. 3, lines 10-13) to provide pre-establish calibration values ;

where the computer based subsystem is further adapted to determine a measured thickness of the coating based on the measured capacitance value of the coating [claims 4, 15, 23] col. 3, lines 40-44).

Given the teaching Cotler, a person having ordinary skill in the art at the time of the invention would have readily recognized the desirability and advantages of modifying Nix by employing the well known or conventional feature of dimension sensors, such as disclosed by Cotler, in order to efficiently establish calibration curve values of capacitance versus dielectric constants and for the purposes discussed above.

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6. As to claim 7, Nix discloses a system for measuring a thickness of a non-conductive coating on a semi-conductive substrate further adapted to display the measured thickness of the coating (col. 4, lines 30-32).

7. Claims 6, 17, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nix in view of Cotler as applied to claims 1, 12, and 20 above, and further in view of Murray (US Patent No. 5,746,905 and Murray hereinafter).

Although the combine teaching of Nix and Cotler shows substantial features of the claimed invention (discussed in the paragraphs above), it fails to disclose:

where the computer based subsystem is further adapted to determine the measured thickness of the coating utilizing the following equation:

$$C = (EA)/(2d),$$

where C is the measured capacitance value of the coating, E is the dielectric constant of the coating, A is the sum area of the first and second conducting plates and d is the measured thickness of the coating.

Nonetheless, these features are well known in the art and would have been an obvious modification to the system disclosed by Nix in view of Cotler as evidenced by Murray.

Murray discloses a coating evaluation system having:

where the computer based subsystem is further adapted to determine the measured thickness of the coating utilizing the following equation:

$$C = (EA)/(2d),$$

where C is the measured capacitance value of the coating, E is the dielectric constant of

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the coating, A is the sum area of the first and second conducting plates and d is the measured thickness of the coating (col. 3, lines 34-42).

Given the teaching of Murray, a person having ordinary skill in the art at the time of the invention would have readily recognized the desirability and advantages of modifying Nix in view of Cotler by employing the well known or conventional features of dimension sensors, such as disclosed by Murray in order to provide the thickness of the coating on the test surface of substrate being measured and for the purposes discussed above.

8. Claims 8-11, 18-19, 21, and 26-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nix in view of Cotler as applied to claims 1, 12, and 20 above, and further in view of Szasz (US Patent No. 3,801,900 and Szasz hereinafter).

Although the combine teaching of Nix and Cotler shows substantial features of the claimed invention (discussed in the paragraphs above), it fails to disclose:

where the system further comprises a stabilizing device adapted to hold the first and second conducting plates in direct and uniform contact with the non-conductive coating [claims 8, 18, 26];

where the stabilizing device comprises a bridge structure having a first leg with a first affixing device attached thereto and second leg with a second affixing device attached thereto, the first and second affixing devices adapted to temporarily affix the bridge to a surface of the non- conductive coating [claims 9, 27];

where the stabilizing device further comprises a force device disposed between the bridge structure and the first and second conducting plates, the force device adapted to apply a force to

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the first and second conducting plates that holds the first and second conducting plates in direct and uniform contact with the non-conductive coating [claims 10, 28];

where at least one of the first and second conducting plates are constructed of a conformal material adapted to be conformed a contoured substrate [claims 11, 19, 29];

where the computer based subsystem is further adapted to use the measured capacitance value of the non- conductive coating in combination with the semi-conductive mobile platform component to determine a measured capacitance value of the coating [claim 21].

Nonetheless, these features are well known in the art and would have been an obvious modification to the system disclosed by Nix in view of Cotler as evidenced by Szasz.

Szasz discloses a measuring device for the thickness of dielectric coating having:

where the system further comprises a stabilizing device adapted to hold the first and second conducting plates in direct and uniform contact with the non-conductive coating [claims 8, 18, 26] (col. 4, lines 30-32) to provide for even pressure against the surface of the coating;;

where the stabilizing device comprises a bridge structure having a first leg with a first affixing device attached thereto and second leg with a second affixing device attached thereto, the first and second affixing devices adapted to temporarily affix the bridge to a surface of the non- conductive coating [claims 9, 27] (col. 4, lines 28-30) to permit layer thickness measurements;

where the stabilizing device further comprises a force device disposed between the bridge structure and the first and second conducting plates, the force device adapted to apply a force to the first and second conducting plates that holds the first and second conducting plates in direct

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and uniform contact with the non-conductive coating [claims 10, 28] (col. 4, lines 28-37) to conform to uneven surfaces on the substrate;
where at least one of the first and second conducting plates are constructed of a conformal material adapted to be conformed a contoured substrate [claims 11, 19, 29] (col. 4, lines 38-41) yto measure round surfaces;

where the computer based subsystem is further adapted to use the measured capacitance value of the non- conductive coating in combination with the semi-conductive mobile platform component to determine a measured capacitance value of the coating [claim 21] col 2, lines 41-50).

Given the teaching of Szasz, a person having ordinary skill in the art at the time of the invention would have readily recognized the desirability and advantages of modifying Nix in view of Cotler by employing the well known or conventional features of dimension sensors, such as disclosed by Szasz in order to provide the measuring result independent of the particular pressure exerted by the electrodes on the coating and for the purposes discussed above.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter Benson whose telephone number is (571) 272-2227. The examiner can normally be reached on Mon to Fri 6:30 AM to 4:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on (571) 272-2180. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Walter Benson
Patent Examiner

February 25, 2005